

Analyzing the Effects of Microfinance: A Stock-Taking of What We Know

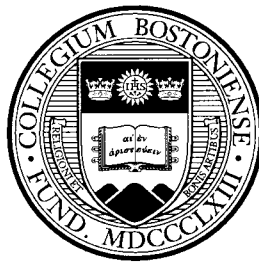
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ANALYZING THE EFFECTS OF MICROFINANCE:
A STOCK-TAKING OF WHAT WE KNOW

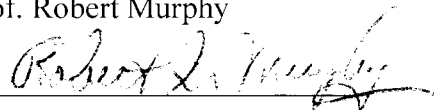
by

Katie Gofus

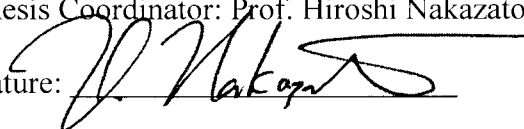
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Abstract

Microfinance and the notion of helping the poor help themselves by providing small loans to serve as startup capital and encourage entrepreneurship has been increasing in popularity as the new panacea to poverty since its development by Muhammad Yunus and the Grameen Bank. In order to accurately identify the validity of this claim, this thesis presents a comprehensive analysis of the academic studies that have been done to date in order to determine what we know about the effectiveness of these programs. By analyzing studies based on three major questions: Who is being studied? What variables are being studied? and How is the analysis done? This research addresses the differences between conclusions and finds that overall, microfinance may be effective for some populations, but is not necessarily worthy of such high acclaim.

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Introduction

Since Muhammad Yunus received the Nobel Prize for his work with the Grameen Bank and the declaration of 2006 as the Year of Microfinance, the notion of micro lending has become a subject of major international interest for both activists and economists alike. However, what remains unclear is whether microfinance as a strategy for poverty reduction is worthwhile. The principle underlying microfinance is the idea of helping the poor help themselves by providing small loans to serve as capital startup to encourage entrepreneurship and future income growth. While this idea is laudable, whether these programs actually produce the predicted effects remains difficult to determine. Given these conceptual difficulties, the scholarship on microfinance is extensive and ever growing.

The current scholarship has found mixed results to the overall question of whether microfinance is an effective strategy. The answers to this question range from ‘probably yes’, to ‘probably no’, or ‘indeterminate given the available data.’ Among the issues under scholarly debate are the casual mechanisms for microfinance to have a noticeable and positive effect, as well as suitable measures for identifying these results. While few studies are beginning to attempt a design based on randomized experimentation, all of the studies to date face unavoidable biases in both participant selection and program placement. As a result of these difficulties, researchers have developed nuanced ways to account for these biases and to measure the impact of microfinance in a variety of areas. These intricate methods provide nuanced results which while in many cases have been contradictory, offer important insight toward the further development of the field.

Part of the problem in analyzing microfinance's effectiveness is the uncertainty of what we collectively know to date. As a stock-taking of our current knowledge about microfinance, this thesis attempts to consolidate, evaluate, and identify the general findings of economists investigating microfinance over the past two decades.

My research aims to be a comprehensive analysis of all the important research that has been done to date and to serve as a resource which others can use to find relevant studies. In addition it aims to synthesize and analyze the findings of those studies and draw conclusions based on a combination of their results as well as make suggestions for what research possibilities still exist. Finally, I hope to be able to draw conclusions on the findings of these studies and to make policy suggestions for future investors.

Background

While often used interchangeably, it is important to first make a distinction between microcredit and microfinance. Microcredit is defined as the practice of lending small sums of money, usually under \$100, to those who are extremely poor and have been overlooked by conventional banks. More generally, microfinance is the practice of providing broader financial services including savings and education to this same population. It is the combination of both of these ideas that encompasses the “Microfinance Revolution” which is ever growing in popularity as the next greatest solution to poverty across the world.

The idea of microfinance was started by Muhammad Yunus in Bangladesh in response to the devastating famine of 1974 which left over 80 percent of the population of Bangladesh living in abject poverty. Yunus started the Grameen Bank by providing \$27 to 42 stool makers in 1976 which has since flourished to provide over \$5.2 billion in loans to over 5.5 million borrowers. Today, the practice of micro lending has created over 3,000 Microfinance Institutions in over 105 different countries worldwide and reaches roughly 67.6 million clients, more than half of which live below the poverty line (Sengupta and Aubuchon, 2008). Founded on the notion of solidarity lending, these loans are extended to families in groups of five or more who lack collateral, employment, and credit history, and thus do not qualify for a traditional loan. By lending to groups of individuals, the Grameen Bank developed a system that eliminates the issues of moral hazard and additional costs that lead to market failure in underdeveloped countries. The

general goal is for individuals to use these loans as start up capital to create self-employment and thus generate income to pull themselves out of poverty.

In Bangladesh, Yunus recognized and ultimately proved through the success of his program that the poor as economic actors are not actually any different from everyone else. He showed that, what holds the poor back from being economically successful is not a lack of a specific skill set, but rather a lack of access to credit. From his experiences living in impoverished countries, he found that the poor were actually already self-employed. In countries where there are not enough jobs, no turnover of jobs, and no social safety nets, people were forced to work for themselves or to starve. In most cases, these individuals possessed the internal capabilities to be productive, but suffered from uncontrollable external shocks which devastated their businesses. Coupled with a lack of access to credit, and in many cases a dearth of savings, individuals were forced to shut down their business and struggled to survive.

Through the microfinance initiative, the Grameen Bank extended loans to many households which had been overlooked by commercial banks due to a lack of collateral expounded by the difficulties of major banks lending to individuals in an unknown area. Yunus, however, provided loans based on trust. The practice of solidarity lending was developed to combat these concerns over moral hazard and adverse selection. While the specific requirements are different across different banks and microfinance institutions, in general, individuals are required to form groups of between three and five in order to apply for loans. Though these group loans are given directly to individuals and the group is held wholly responsible for the repayment of the loan and faces extreme consequences

if this is not met. Based on the fundamental idea of “group responsibility,” this not only encourages thoughtful selection of groups and ensures that all members are considered trustworthy enough by the others to assume a risk together, but also encourages group members to help each other in making payment deadlines if one member is facing serious difficulties. In addition, the practice of group lending helps with enforcement problems which are often faced when lending in these areas by setting mandatory group meetings with area loan officers on a regular basis. Ultimately, by lending to groups of individuals, banks and MFIs can increase their knowledge of the area and the enforcement of their repayment plans by relying on the knowledge and influence of group members on their fellow group members (Armendariz and Morduch, 2005).

Many programs, including the Fonkoze Bank in Haiti, provide graduated loan ladders such that loans are made to individuals at varying levels of poverty. As households and individuals successfully repay loans, they can move upwards along the borrowing ladder and borrow larger amounts of money with shorter repayment periods and receive more support. In practice, a functioning Microfinance Institution runs by using the profits earned on the top-level loans to finance the lowest level loans which carry the highest risk. At each level of borrowing, MFIs and banks provide education and training to teach borrowers about the loan process and to give them essential skills to help their businesses succeed. Ideally, borrowers can use these skills and the startup capital from their loans to fund entrepreneurial practices and earn enough money to escape poverty.

In theory, economists believe that the principles of micro lending can be extended to have broad effects on reducing poverty and increasing the standard of living through various secondary effects. Primarily, loans are taken to spur entrepreneurial growth and create business endeavors to increase production and income. Thus, the initial effect predicts an increase in income of participant households who engage in business activities and begin to earn money for themselves following receipt of the loan. In turn, this is predicted to increase consumption levels, as households have more income to spend and purchase more necessity goods such as food that they might not have been able to do previously. Additionally, many researchers have also predicted that these increases in income can have indirect impacts on a variety of other factors such as school enrollment, child nutrition and health, and women's fertility and empowerment.

However, what are much less often measured are the impacts of microcredit loans on households in the village that do not actually participate in the programs themselves. These effects, often considered the "spillover effects" of microfinance are what really determine the overall effectiveness of a program at reducing poverty in a community. In theory, we expect that at some point, by adding money to individuals within a given community, we will see positive impacts on larger community-wide measures above the measured impacts on individuals. By measuring the effects on both borrowers and non-borrowers within a community we can determine the overall macroeconomic effect on society as a whole. By measuring the changes for non-borrowers, we get closer to seeing the entire scope of the effects that these programs have on the community. Through this

we are able to better measure the externalities, either positive or negative, that microcredit loan programs have on a given village or community.

The theory behind the macroeconomic impacts of microcredit is explored by the research of Somjita Mitra in the dissertation entitled, “Macro Impact of Microcredit.” In this research, the author explores the spillover effects of microcredit through the effect on wage and the income multiplier. The first effect is based on the idea that microcredit loans encourage entrepreneurship and increases self-employment within a community. As more individuals become involved in self-employment, the supply of wage laborers decreases which in turn increases wage rates based on the fundamentals of supply and demand. Increasing the wage rate improves the income and consumption levels of all wage laborers in the community, therefore indirectly increasing standards of living of those who do not participate in the program. The second theory behind the spillover effect is related to the idea of the income multiplier, which reflects increases in income above the initial exogenous spending increase. When borrowers receive more money, they are likely to spend it within the economy, which distributes the added income throughout the economy. Therefore the initial impact of the loan is magnified as the money reaches other sectors of the economy and can account for stimulation, which improves living standards across the community (Mitra, 2007).

However, in attempts to measure these effects in practice, researchers have faced major limitations based on the difficulty of identifying accurate control groups. The two major biases which must be accounted for in identifying control groups for any academic study of microfinance are the selection bias and the program placement bias. The

selection bias captures the non-randomness of the population of individuals who choose to participate in microfinance programs. In general, we find that most borrowers share positive characteristics in terms of responsibility and entrepreneurial ability which most non-borrowers lack. Therefore, any strict comparison of borrowers to non-borrowers provides skewed data which inflates the effects of microfinance by assuming that the baseline comparison is the same. Researchers have moved to using new borrowers as a comparison group for studies under the assumption that they will share many of those same characteristics because they are also joining the program. However, in this case we must question why these borrowers joined the program later and should not assume that they are identical to the initial borrowers either.

The second major bias researchers face is the program placement bias which is harder to control for. This reflects the selection process of MFIs in determining where to locate their programs. Obviously there are community characteristics which make some towns more appealing to investors and cause them to implement their programs there rather than in other communities. Therefore in comparing effects in program villages versus control villages it is important to account for these initial underlying differences which may make program villages seem disproportionately more successful.

Ultimately, these academic studies aim to isolate and identify the impact that microfinance has on the wellbeing of individuals. Ideally this measures what would have happened to borrowers in the exact same situation if they had not borrowed money from an MFI. However, in practice it is impossible to find two groups of identical individuals in exactly the same situation to compare. Although these difficulties are still present in

studies today, researchers have developed different ways to overcome these limitations in academic studies. This research will look critically at their approaches and attempt to draw conclusions based on their results and give advice for future researchers.

Research Methods

This thesis undertakes an in-depth analysis of the major historical and current studies related to the field of microfinance. Since the research on this topic to date has produced somewhat contradictory results, it is important to take a step back and look at what has been done and what has been concluded in order to determine the best ways to move forward. Rather than attempting to reproduce an analysis of data on my own, the purpose of this thesis is to provide a stock-taking of our current knowledge about microfinance. Ultimately, this thesis attempts to consolidate, evaluate, and identify the general findings of economists investigating microfinance to date.

This research combines an analysis of both the qualitative aspects of which factors to study and the development of variables to study those impacts, as well as quantitative aspects based on the relative effects which are calculated in various studies. By looking at the body of research as a whole, we can gain a more comprehensive understanding of the variations and nuances of independent studies. Through a comparison of many major research conclusions based on three major focus areas, I will pose an overall analysis of what is known and make policy recommendations for further research and the use of future resources. These suggestions will offer an answer to the pertinent question of what overall impact microfinance has on reducing poverty in developing countries and whether it should be the focus of further financial resources by future investors.

My research focuses on three levels of analysis to evaluate the studies that have been done to date. The first is an analysis of the broad question of “who is being

studied?” Specifically, this poses a consideration of the data used for the study and how it is collected. This section will focus on three main aspects of sample selection and data collection: data collection methods, sample location, and gender identification. Special attention is given to the difficulties of overcoming the selection bias and program placement bias as well as producing quantifiable data which is reliable and accurate.

In many cases, data measuring the impact of microfinance is collected through questionnaires and surveys presented to borrowers; however, often times the questions are vague and ask “did your income increase in the last year?” In some cases borrowers are asked to attempt to quantify the changes in income that they’ve seen over time, but even in this case the data is often unreliable. Therefore it is important to look at various methods of data collection and the effects that they might have on the conclusions which they reach. Additionally, important differences can be seen in studies which vary across regions of the world. Specifically, I look at studies focused in Asia, Latin America, and Africa, in comparing the goals and methods of these programs as well as their results. The final distinction in sample selection is based on participant gender identification and measures the separate effects of male versus female lending. The results and reliability of any study’s results depend on the sample group which is studied and the data that is used to measure them. Therefore, I look at these distinctions as a first level of analysis in order to gain a better understanding of the basis for the research which has been done.

The second level of analysis evaluates the variables which are used to measure the predicted impacts. For many of these variables, including the measurements of income, education, and nutrition, determining variables which accurately measure the proposed

impact are not entirely evident. Through various studies we see different attempts to capture these impacts through the use of an assortment of variables. This section will consider the measurements and results for six major variables including: income, employment, health, children's schooling, women's empowerment, and the reduction of poverty.

Microfinance programs are aimed at directly impacting household and individual levels of income; however, in practice the measurement of the income variable differs across studies. In order to measure direct financial changes, studies have employed variables such as income, total consumption, savings, and wealth accumulation. Other studies attempt to measure poverty through a probability function based on an objective status of poverty. Many studies also expand their analysis to include impacts on health and education which can be measured by body mass index or height-for-age evaluations, and school enrollment and attendance, respectively. By identifying the way in which these outcomes are measured and comparing the conclusions which are reached in their analysis, we begin to have a better interpretation on the general understanding of this field of study.

The third level of analysis is based on the processes used to analyze the data. The book, *The Economics of Microfinance*, by Armendarix and Morduch discusses different approaches to measuring impacts and attempting to determine causation in microfinance studies. While impact studies range from a qualitative to quantitative approaches, this section will focus on those that use the scientific method and are based on quasi-experimental designs. Variations of these methods include the difference-in-difference

approach, used by Morduch, and the regression approach, used by Pitt and Khandker which employed cross-sectional and longitudinal analysis to determine estimates (Armendariz and Morduch, 2005). Using the same sets of data, these two papers reached completely different conclusions based on the variation in methods employed. Therefore, in order to determine which is more accurate, I look at the limitations of each form and the adaptations of these methods into more recent studies.

These three levels of analysis set forth a broad scope through which to view academic studies within this field. From this analysis, my research will conclude with a policy recommendation focusing on means of improvement for future impact assessment studies as well as an overall analysis of the effectiveness of microfinance programs to date, and whether they should be seen as the next solution to reducing poverty.

Literature Review

One of the first recognized comprehensive studies of the impact of microfinance, “Credit for Alleviation of Rural Poverty: The Grameen Bank in Bangladesh,” was conducted by Mahabub Hossain in 1988. Through a one-time comparison of sample household groups “with” and “without” access to microfinance, Hossain concluded that access and participation in the Grameen Bank microfinance program had positive impacts on capital accumulation and household income, and also was associated with the generation of employment. The data was gathered through a survey of 280 households sampled from five project villages and two control villages in which households were asked to provide information about a number of factors including their employment, assets, income, expenditure, and investment. Sampled households were divided into four categories in order to identify participant and control groups. These divisions consisted of: Grameen Bank members in project villages, non-participating households within the target group, target group households in control villages, and non-target group households in both villages. By comparing the characteristics of the participating members of the project group with the non-participating households within the target group, the analysis attempts to overcome the selection biases and establishes results which are relatively reasonable (Hossain, 1988).

These results conclude that average household income (as measured by the gross value of output and the costs of production for different production activities) for participating households was 43% higher than target group households in control villages and 28% higher than target group non-participants in project villages. In addition, it

finds that the income from wage labor is higher for non-participants in project villages as the wage rate is increased by 19% per year in these areas. This result is correlated with the bank's creation of employment in livestock farming for those initially unemployed, and a shift from agricultural wage laborers to petty traders for those already employed at their entrance to the program. Overall, Grameen Bank participation generated on average 12 days per month of activity per household and is correlated with an increase in village level per capita expenditure by 8%. However, Hossain recognized the limitations of identifying adequate control groups and the reality of the biases these created in his study (Hossain, 1988).

In 1998, Shahidur Khandker published an influential book, *Fighting Poverty with Microcredit*, and the related paper, "The Impact of Group Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" with economist Mark Pitt. This marked the first attempt to measure the difference of gender-based lending and the use of statistical analysis to quantify the direct and indirect impacts of micro lending. Using survey data collected by the Bangladesh Institute for Development Studies, Pitt and Khandker evaluated the effects of the three major microfinance organizations in Bangladesh: Grameen Bank, Bangladesh Rural Advancement Committee (BRAC), and Bangladesh Rural Development Board's Rural Development program (RD-12). Each of the three programs use specialized qualifications and methods, however all three offer credit to those living in rural poverty defined as owning less than one-half acre of land and each uses peer-monitoring of lending as a substitute for traditional collateral. Using village-level fixed-effects methods to avoid variation in

village unobservable characteristics and a quasi-experimental survey design, this study estimates the level of participation based on household and village characteristics and identifies gender-specific credit equations. Ultimately Pitt and Khandker find that for every additional one “taka” of credit that is lent to female borrowers, an additional return of 0.18 is earned for annual household expenditure and a return of only 0.11 is earned when the primary borrower is male (Pitt and Khandker, 1998).

The research published by Pitt and Khandker in 1998 is challenged by Jonathon Morduch’s paper, “Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh,” published in June of the same year. In this, Morduch expresses concern over the validity of the statistical methods previously used, namely the use of fixed effects estimators to control for unobservable characteristics related to the program placement bias. Rather than controlling for initial differences, Morduch argues these methods can intensify biases when programs are targeted to specific populations. Using the same data with a different approach, Morduch finds that the estimates of program impacts are minimal and even negligible. Unlike the estimations based on program participation used by Pitt and Khandker, Morduch focuses on the effects of program eligibility as the determining factor. By using a difference-in-difference method to evaluate eligibility, he finds that households which are eligible and have the opportunity for program participation do not have significantly higher consumption than similar households that do not have access to programs. Alternatively, Morduch concludes that access to microcredit significantly reduces seasonal variability in consumption by income smoothing (Morduch, 1998).

This highly respected debate between Khandker and Morduch represents the most highly cited contest in the field in which researchers reach different conclusions by studying different variables and using different methods. As Khandker acknowledges in a later publication, findings in studies on microfinance differ widely due to differences in underlying impact assessment methodologies (Khandker, 2001). Therefore this dispute serves to highlight the significance of analyzing the work that has been done to date and recognizing the limitations of different methods of analysis to reach an overall understanding of the field.

Since 1998 and the publication of additional studies on the effectiveness of microfinance, it has become generally accepted that microfinance programs are associated with positive impacts on income and wellbeing of program participants. However, throughout the development of the current research, economics have identified many uncertainties and points of contention, some of which are even present in studies today. Specifically these include: the type of data which is used (cross-sectional versus panel data), the question of selection biases and how to accurately define control groups, the difference in male versus female borrowing, the effects of microfinance at the village level and on nonparticipants, and whether the research proves that microfinance has a significant effect on the alleviation of poverty.

One of the first considerations in evaluating any study is the type and quality of the data that is used. For impact evaluations of microfinance and other poverty reduction methods, data generally comes in one of two forms: cross-sectional data or panel data. Cross-sectional data provides information on various factors at a given time across

sectors, while panel data provides similar data over an extended period of time. The first study presented by Pitt and Khandker in 1998 used cross-sectional data of three microfinance programs in Bangladesh and relied heavily on statistics using a quasi-experimental survey design to reach their conclusion (Pitt and Khandker, 2005). In a follow-up study done by Khandker in 2005, “Microfinance and Poverty: Evidence using Panel Data from Bangladesh,” he adds to his earlier findings with additional support based on panel data analysis.

The use of panel data allows researchers to estimate impacts based on more than one observation without the instrumental variable method in which alternative factors are identified to estimate relationships and remove endogeneity from cross-sectional data. In the study using panel data, estimates of a household-level fixed-effects model allows for more robust estimates and resolves endogeneity on its own without the use of instrumental variables. This also allows for a consideration of both the current and past characteristics of households which affect consumption demands (Khandker, 2001). Morduch and Armendariz summarize this comparison between cross-section and panel data in their book, *The Economics of Microfinance*, in the chapter entitled “Measuring Impacts.” According to their description, longitudinal or panel data allows for a more direct measurement of impacts to given households over time, while cross-sectional data requires more in-depth statistics allows for the comparison of eligible household groups across villages, and does not address the bias from nonrandom program placement (Armendariz and Morduch, 2005).

The biggest issue which all researchers face is how to account for the selection bias of individual households in defining an accurate control group. In the foundational study conducted by Hossain, the program group is compared to non-participating households within the target group. While these comparison households have access to similar resources as the participating households, the model for program participation shows that Grameen Bank participants have larger families, younger heads of households, more education, and participate in non-agricultural activities. Within project villages these differences are not statistically significant and therefore Hossain concludes that a comparison using non-participating target households as a control will not produce biased estimates. In more recent studies however, alternatives to identifying control groups have been developed (Hossain, 1988). In their book, Armendarix and Morduch discuss the use of prospective clients and new borrowers as control groups in studies based in North East Thailand and Peru. In both of these cases they suggest the importance of questioning the reason for the timing delay of the decision to participate in the program. Additionally this control group ignores the possibility for dropouts over the course of the program which can positively bias the data. While the old borrowers in the program group have lasted into the program, the new or prospective borrowers have yet to be tested and therefore might possess inferior characteristics for success (Armendariz and Morduch, 2005).

This reasoning is supported by the article, “Microfinance Impact Assessments: The Perils of Using New Members as a Control Group,” by Dean Karlan published in 2001. In this, Karlan identifies three main shortcomings of using new participants as a

comparison group in impact assessments. Microfinance theory suggests that by comparing households who also participate in microfinance programs, some of the immeasurable characteristics of borrowers such as “entrepreneurial spirit” can be captured and held constant. However, Karlan poses major concerns regarding the problem of dropouts, the timing of voluntary selection, and institutional dynamics of changes in MFI strategies. In measuring new members, there is no way to account for the reality of the dropout problem which occurs over time. Therefore the control group suffers from an incomplete sample bias in that it ignores the negative impact of households which will not continue with the program. This is tied to the attrition bias which compares the relative percent of rich versus poor participating households and leads to skewed impact measurements.

Secondly, Karlan suggests that it is important to question the timing of the decision difference that occurs as a result of voluntary selection. To determine why these households chose not to join the program earlier, it is important to address the assumption that the best candidates for loans were likely to have been selected to participate first and question how similar the control group actually is to the initial participants. Finally, new participant control groups still do not account for the program placement bias or the possibility of changes in credit requirements of MFIs over time. Therefore Karlan suggests that in order to identify the most accurate control group, the sample must be altered to include dropouts from previous years and must be randomly sampled from a larger group (Karlan, 2001).

Another important point of contention which has raised increasing inquiry in recent years is the debate over the impact of gender-based borrowing and the distinction between male and female borrowers. Many microfinance programs are specifically aimed at encouraging female borrowers based on the perceived notion that women are more likely to spend additional money in positive ways. Female borrowing is therefore expected to impact not only overall household consumption on necessity items, but also to indirectly improve children's health and education, while men are perceived to be more likely to spend extra money on luxury goods. The first major study which addressed this issue was the research published by Pitt and Khandker in 1998, "The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" In this study Pitt and Khandker identified gender-specific credit equations and modeled different types of programs: those that were male only, female only, and those that provided loans to both male and female heads of households. They found significant differences in the slope of the demand for credit for men and women, and that increasing land ownership only increases program credit for men and increasing age increases expected credit for women while it decreases that for men. Impacts on household expenditure, labor supply, and the schooling of children are also measured in terms of male and female credit in this study.

Results show that female borrowing significantly and positively affects household expenditure and that an addition one "taka" of credit provided to women results in an increase of 0.18 "taka" to the annual household expenditure. Male borrowing parameters however are found to not be significant determinants of expenditure and a similar

increase of one “taka” of credit is only correlated with a 0.11 “taka” increase to annual household expenditure. In addition, they find evidence of increased productivity of women’s market time, and a minimal increase in girls’ school enrollment by female borrowing due to the substitution effect which identifies the need for girls to do chores at home when women engage in work. However, boys schooling increases significantly as a result of female borrowing more than the increased calculated as a result of male borrowing (Pitt and Khandker, 1998).

In order to more accurately measure the overall impact of microfinance, researchers are moving towards the consideration of village level and non-participant effects in addition to the direct impacts that borrowing has on participating households. In Khandker’s 1998 book, *Fighting Poverty with Microcredit*, he begins to identify these areas of impact and acknowledges the importance of identifying both the positive and negative externalities of microcredit to assess the full impact of these programs. To do this, they compare aggregate village-level outcomes of program villages and non-program villages for a number of different variables including total production, total income, total employment, wages, and school enrollment rates. Their initial study finds significant differences between program and non-program villages in the measurement of non-farm production, but insignificant differences on indirect aspects including contraceptive use, fertility, and school enrollment (Khandker, 1998). In the follow-up research published by Khandker in 2005, “Microfinance and Poverty: Evidence using Panel Data from Bangladesh,” they again attempt to measure the “spillover effects” of borrowing by participating households on non-participating households in project

villages. These are measured by changes in behaviors of non-participant households as a result of changes in the average level of village borrowing. Their findings show that in addition to having a direct impact on participant households, the average village level of borrowing has a positive and significant impact on the per capita expenditure of the average household in the village. Therefore, as the overall level of borrowing for villages increases, the overall per capita expenditure for that village also increases as a result of the indirect impacts on non-participant households (Khandker, 2005).

In 2007, Somjita Mitra published a more comprehensive study of this notion entitled, “The Macro Impact of Microcredit.” Based on primary data collected in West Bengal, India, this study concludes that microcredit has a positive impact which extends to the entire community, both borrowers and non-borrowers alike. The theory of these macro impacts or spillover effects is based on the idea that by increasing self-employment from micro lending, the supply of wage laborers decreases and thus the wage rate must increase as a result of basic supply and demand. In addition it focuses on the theory of the income multiplier by which as certain households increase their income and spending, this infuses money into the village itself and thus raises the income and wellbeing of other households in the village as well. By introducing a dummy variable to distinguish between microcredit borrowers and non-borrowers, lending is found to have a positive and significant impact on the income of all the individuals in the sample, both borrowers and non-borrowers. These results support the theory that by helping certain families in a community, microfinance can actually have a wider impact on helping the community as a whole (Mitra, 2007).

Ultimately the overall analysis of the impact of microfinance projects is aimed at determining whether or not it is an effective tool for the alleviation of poverty. These policies and programs were designed with the goal of improving wellbeing in developing countries by reducing poverty and hence researchers have begun addressing this goal by analyzing its overall impact. Khandker describes poverty as the result of low economic growth paired with high population growth and an extremely unequal distribution of resources in, *Fighting Poverty with Microcredit*. He proposes that the key to reducing poverty is through the creation of jobs and by investing in both physical and human capital to increase productivity. In an analysis of this question, Khandker finds that in terms of household consumption, 21% of Grameen Bank borrowers succeeded in raising their families above the poverty line within 4.2 years of program membership. In addition, he finds reductions in aggregate poverty at the village level where programs are present both in the moderate and extreme levels of poverty. Expanded to the national level, the effects seem quite small but still significant. Estimates suggest that microfinance programs benefit roughly 20% of the population and that nearly 1% of the population can lift itself out of poverty each year through program participation (Khandker, 1998).

While evidence suggests that many microfinance programs do have positive effects in these realms, controversy arises over the claims of microfinance as a social liability encouraging higher consumption with little long-term or sustainable outcomes which only cause participants to become dependent on microfinance programs. Khandker's follow up research published in 2005, supports their initial findings by

proving a decline in moderate poverty by 17 percentage points and a decline in extreme poverty by 13 percentage points between the survey data of 1991/92 and 1998/99. This shows a net reduction of poverty by 18 percentage points in program areas, 13 percentage points in non-program areas, and 17 percentage points overall. Over time, Khandker concludes that microfinance programs continue to reduce poverty at a lower rate and provide positive benefits to the communities in which they serve (Khandker, 2005).

Analysis Section I: Who is being studied?

The first level of analysis in looking at academic studies of microfinance requires a consideration of the data that is used and how it is collected. Broadly this raises the question of “who is being studied?” and how program or project groups are identified for analysis. Reliable data is the first step to creating an accurate study, and is absolutely necessary in order to establish meaningful results. While finding precise data may be difficult since many limitations exist, if researchers fail to accurately account for the shortcomings of their data in their analysis, their results may not be reliable. In order to address this issue I will consider three significant characteristics of data: the methods of data collection; the means of participant identification, namely the role of gender; and a regional comparison across three continents. Finally I will address the general limitations of data collection methods and how researchers are attempting to avoid their bias.

I. Data Collection Methods

The data required for microfinance analyses generally depends on the level at which the study is to be conducted. Impact assessments are conducted at various “units of assessment” ranging from the individual to the institutional level, with enterprise, household, and community in between. Each degree of analysis has advantages and disadvantages to the accessibility of data and the significance of the results. Most of the studies considered in this research are conducted at the household or community level. Data for these evaluations generally consists of individual household information on basic demographic details as well as borrowing habits, consumption levels, work history,

and savings. Other variables are often included for measuring additional impacts in specific studies which will be discussed in later sections. Since the data is specific to individual households, it is generally collected through questionnaires or surveys given to borrowers or from personal interviews of these borrowers by data collectors. This creates a possibility for the collection of skewed or unreliable data which must be accounted for in the studies.

The first issue to address is the selection of households that are surveyed and those that respond. If collection is done only in the most accessible villages which also happen to be the most successful villages, data will be skewed and can produce unreliable results. Similarly, if the participants which are most likely to respond and be interviewed are also the ones who are doing the best in the program, this creates problems as well. Therefore it is important that a truly random and representative sample be taken to identify an accurate program group for any analysis.

In addition, we must consider the agenda that the respondents might have in their responses to surveys and questionnaires. These drawbacks vary for the different groups of households which are interviewed, but can provide serious biases if they are not consciously considered. While participating households are likely to cooperate with surveys and interviews, if the research is associated with the microfinance institution, the responses they give may not be accurate. Instead of providing true answers, participating households are more likely to try to give what they think is the “right answer” to make themselves look better to the microfinance institutions. Therefore, it is fair to question most of the data which is collected by a self-reporting process in which households

indicate their own responses. On the other hand, in identifying households for the control group, individuals may be more unwilling to cooperate since they see no added benefit for themselves. Lastly, tracking down program dropouts to survey may be the hardest to achieve.

Research on “Imp-Act” conducted by the Institute of Development Studies at the University of Sussex in England attempts to establish a protocol for the collection of qualitative data, specifically in the microfinance field. In order to counter the issues addressed above, they emphasize the impact of how interviews are set up and initiated. While focused on implementing longer in-depth personal interviews on a smaller sample of data, they propose that a holistic understanding of certain cases provides a better assessment of the impact of programs. Following the outline of their “Qualitative Impact Protocol,” or QUIP for short, interviews should be set in an open forum where interviewees are given a clear description of the purpose of the study and the opportunity to ask questions in order to clear confusion and ensure the most honest responses. It also addresses the trade-off between open-ended response questions and specific questionnaire information and defers to the skill of the researchers to enforce this balance as they see fit. Ultimately, this form of data collection is limited by the scope of people that can be measured; however, many of the important tactics that they bring up can be applied across the board to other types of data collection as well (Copestake, Johnson, and Wright, 2002).

Sample surveying has been one of the most constant means of collecting data for microfinance institutions since the beginning of impact assessments and continues to be

used today. This method however raises concerns over the validity and types of responses that are collected. A primary concern relates to the manner in which the questions are asked; namely, if the questions asked of the respondents are vague or require vague responses. Questions such as, “did your income increase in the last year?” measures the respondents perception of their financial situation over the past year, and does not provide a quantifiable standard with which to compare said “increase” or “decrease” with other responding households. However, since the households and areas that are being studied often do not keep accurate records of finances or business transactions, this may be the best data available. Alternatively, borrowers may be asked to estimate and attempt to quantify the changes in income or other variables that they have experienced over the past year to acquire more numerical data. This also can provide unreliable estimates; therefore survey data itself should not be solely relied on as a means of data collection.

In recent studies, there has been an increasing use of alternative data collection methods. These models include rapid appraisal, participant-observation, and participatory learning and action. In addition to survey collections, each of these methods has varying strengths and weaknesses identified by David Hulme in his paper, “Impact Assessment Methodologies for Microfinance.” However, he finds that to a growing extent researchers are relying less on one specific model for data accumulation, but rather a combination of various methods to achieve the most accurate data for their study. Through this process of crosschecking data, Hulme finds that researchers have more confidence in their conclusions (Hulme, 2000). However, in depth surveying and

various methods of data collection can be costly and beyond the budget of microfinance and government organizations who are interested in conducting impact assessments. Therefore data collection remains one of the biggest limitations of impact assessments in the microfinance world.

II. Location

Another factor which must be considered when looking at the question of “who is being studied?” in any impact assessment is the region in which the study is conducted. While microfinance programs began in Bangladesh, to date they have spread to over one hundred countries across the world. Many of the first studies focused on programs in Bangladesh such as the Grameen Bank and other countries in Asia, but today these studies have spread to regions including Africa and Latin America as well. Environmental aspects may play an influential role in the establishment and the success of microfinance programs around the world, and regional differences may be able to explain correlations among measured impacts as well. This section attempts to look at studies from a regional perspective to determine geographic biases or influences on program effectiveness and impact assessments.

A. Asia – Bangladesh, India, Thailand

The first region we will look at is Asia, specifically Bangladesh, India, and Thailand, where the majority of impact assessments in the region have been conducted. Studies from this area tend to be the most numerous and also the most in-depth, because

of the history associated with microfinance programs in this region. Most of the early foundational impact assessment studies by Hossain, Khandker, and Morduch, analyzed data from this region, specifically looking at the Grameen Bank and other programs in Bangladesh such as BRAC and RD-12 since it offered the widest source of data at that time.

An early study conducted by Hulme and Mosley in 1996 conducted a similar impact analysis of programs in Asian countries including Bangladesh and Indonesia which found a positive impact on borrower incomes (Montgomery and Weiss, 2005). Most of these early studies also found positive impacts on some level of borrower income and poverty reduction; however, the data and analysis methods that were used were questioned by later studies which questioned the results that they concluded. This was also true of the data used by Khandker, drawn from a series of surveys conducted in the 1990s by the Bangladesh Institute of Development Studies (BIDS) and the World Bank. Khandker analyzed this data and found positive impact results for variables such as household consumption and poverty reduction in Bangladesh, but when Morduch looked at this same data, he found distinctly different results. A more recent study in Bangladesh by Rafiq, Chowdhur, and Cheshier evaluates the impact of the Grameen Bank on the poverty level of borrowing households and finds that the poverty status of comparison or control households is 22% higher than that of program households. Since the probably of being poor for participating households is significantly less than for non-participating households they conclude the Grameen Bank has a positive impact on reducing poverty (Rafiq, Chowdhury, and Cheshier, 2009).

Studies in Asia are not only limited to those conducted in Bangladesh on the impacts of the Grameen Bank. In addition, a number of studies have been done in India looking at the impact of similar programs. A randomized evaluation by Banerjee in 2005 looked at the effects of the Spandana program in Hyderabad, India. From a comparison of treatment and comparison groups, their analysis found that microfinance programs had no significant effect on health, education, or women's empowerment, but that it was positively related to expanding business and increasing consumption and expenditure on durable goods (Banerjee et al, 2009).

Another recent study by Somjita Mitra on the *Macro Impact of Microcredit*, studied the effects of microfinance programs on households in West Bengal, India. With data collected through door-to-door interviews and questionnaires, Mitra compared microcredit recipients to other loan recipients and non-loan recipients. The results conclude that microcredit loans have a positive and significant effect on expenses and savings in the recipient group, and that the amount of the loan is a positive and statistically significant determinant of recipient income. Additionally, the analysis concludes that microcredit loans have a significant impact on the income of loan recipients as well as the entire population which implies that through the multiplier effect the income of loan recipient increases, there is a secondary positive impact on the incomes of non-recipients as well (Mitra, 2007).

While most of these studies have found positive program impacts, analysis in another Asian country, Thailand, has not found as promising results. Studies conducted by Coleman (1999) and McNelly et al (1996) consider village-banking programs in

Thailand which yield inconclusive or less convincing conclusions. The analysis by Coleman in 1999 finds no evidence of program impact by village bank membership on assets or income variables that is significantly different from the control groups. The follow up research in 2004 finds that programs in this region are not well targeted at reaching the poor, but instead loans are given to households in the wealthier population. The McKNelly study of 1996 finds positive benefit, but fails to provide statistical evidence for differences to determine significance of their findings (Montgomery and Weiss, 2005).

B. Latin America – Bolivia, Peru, Ecuador

Microfinance in Latin America was founded with the establishment of Banco Sol in Bolivia which dates back to 1986, a time of widespread unemployment as a result of the collapsing populist regime. With the help of Accion International, Banco Sol became the first private commercial bank dedicated exclusively to microenterprise which aimed to provide credit to the poor and informal sector. Other microfinance organizations have developed in Latin America in countries such as Peru and Ecuador, most of which are focused on the commercial profitability aspect rather than poverty reduction. In effect, microfinance in Latin America has not reached the poorest of the poor and the proportion of borrowers who fall below the poverty line is rather small.

The first major Latin American country that received attention from microfinance institutions and impact assessments is Bolivia with the establishment of Banco Sol. In an analysis by Hulme and Mosley (1996), Banco Sol borrowers were compared to a control

group of approved borrowers who had not yet received their first loan. In this, borrowers were found to have an average annual income increase of 28% as compared to an increase of only 14.5% in the control group. While this positive impact is associated with the microfinance membership, only 29% of the sample of borrowers for the study initially fell below the poverty line, and the average household income of borrowers in the sample was five times greater than the national poverty line. In a follow-up survey these positive impacts were supported with findings that Banco Sol borrowers showed income growth more than twice that of the control group (an increase of 214%).

Research has also been done by Dunn and Arbuckle in 2001 on micro-enterprise loans in Lima, Peru by Mibanco. In a longitudinal study comparing borrowers to non-participants with similar characteristics, they find that participants have substantial increases in net income, assets, and employment over time compared to their non-participant matches. While these differences are significant, the researchers acknowledge the limitations of their model created by the self-selection bias and express hesitation towards attributing all of this increase to the micro credit program of Mibanco. In addition, the average household income of participants in the Mibanco program fall slightly above the national poverty line and only 30% of borrowers are below that line. However they find a positive effect on the reduction of poverty in their follow-up survey which concludes that borrowers were 6% more likely to be above the poverty line than non-borrowers.

Additionally, a study by Banegas in 2002 looked at the effects of the Banco Solidario Microfinance Institution in Ecuador and the Caja los Andes in Bolivia. Both of

these data showed that taking a loan with either organization was associated with increases in income, but the research did not measure the extent to which their incomes increased. Similar to the other programs, the depth of these organizations at reaching the poorest was also somewhat limited. Of the participants in the Banco Solidario program in Ecuador, 75% belonged to the lower and intermediate poverty groups as identified by the CGAP poverty index, and only 48% of the participants in the Caja los Andes program were in these groups. While these studies clearly show that microfinance and micro enterprise loan programs have positive effects for borrowers in Latin American countries such as Bolivia, Peru, and Ecuador, it is still uncertain how effective these are at reaching the poorest households and at ultimately reducing poverty in this region (Montgomery and Weiss, 2005).

C. Africa – Kenya, Malawi, Ghana, Egypt, Zambia

The final region which has experienced significant levels of microfinance in recent years is Africa. Impact assessment studies in African countries provide a picture of the most negative outlook compared to the studies done in other regions of the world. A study by Graeme Buckley, *Microfinance in Africa: Is it either the Problem or the Solution?* is based on original research in Kenya, Malawi, and Ghana argues that microfinance in Africa might not deserve all the positive acclaims it has been receiving. Buckley identifies several factors specific to African regions which he argues limit the typical positive impacts that are seen from similar programs in other parts of the world. One main factor is the tendency of enterprise in Africa to consist of a portfolio of

activities rather than one specific business practice, largely seen by vendors who sell many different goods. In addition, different cultural standards and the role and importance of extended family networks in Africa also limit the desire to receive formal loans and limit the benefits of these programs. Finally, the weakness of property rights and factor markets hinder the development of a formal financial market as well. All of these factors together promote the success of the informal sector in Africa which in effect negates the impacts of efforts such as microfinance which attempt to formalize business. Ultimately, Buckley finds that in these three countries there is little evidence of significant and sustained positive impact on borrowers (Buckley, 1997).

Other studies in African countries however show somewhat mixed results. A study by Nader on the effects of Microcredit on the wellbeing of women in Cairo, Egypt finds positive associations between program participation and measures of income, assets, and levels of child schooling. By comparing women who have participated in the program for at least three years with those who are just entering the program, Nader attempts to measure the overall socio-economic wellbeing of women in this region through these variables as well as measures of health and harmony in the family. While the later two variable find no significant correlation with participation, Nader's results give evidence of program success in the African region (Nader, 2008).

Case studies in Zambia and Malawi however, provide less optimistic results. In Zambia, research by Copestake, Bhalotra, and Johnson finds that only borrowers who successfully complete their first loan and graduate to taking out a second, larger loan see improvements in their wellbeing. Alternatively, the households and borrowers who fail

to complete their first loan and drop out of the program (a percentage which is close to 50% of initial participants) end up worse off economically than they were before they entered the program (Copestake, Bhalotra, and Johnson, 2001). Similarly, a study in rural Malawi on the effects of microfinance on child work finds that programs increase the likelihood of children working. The study distinguishes between domestic chores and work in household enterprises, but finds that both are higher in families which engage in microfinance loans to support entrepreneurial work. However, they find that this increased propensity for children working has no significant effect on children's school attendance (Hazarika and Sarangi, 2005). Therefore it is difficult to assess what the implications of these impacts are on long-term wellbeing of the children that are affected in this region.

III. Gender of Program Participants

The foundation of many microfinance programs was based on the novel idea of giving loans to women who are often underrepresented in impoverished and developing countries. Based on the idea that women are more likely to be fiscally responsible and spend money on necessary investments including food, health, and education expenses, while men are more likely to spend extra money on consumption goods such as tobacco or alcohol. Therefore, many of the major microfinance organizations target female borrowers. In Asia, women represent nearly 98 percent of borrowers, and over two thirds of the clientele in Africa, Latin America, and the Middle East. Consequently, it is important to look at the impacts that microfinance has on gender as a result of these

statistics. Many major studies look at the impacts on gender as an independent variable, often described as the empowerment of women, or harmony within the family. These variables will be addressed later in this research. However, here we are interested in looking at the impact that women have as borrowers in the identification of “who is being studied?” Although the majority of borrowers are in fact women, few studies actually separate the participant groups by gender. Therefore, it is difficult to measure the direct impacts of female borrowers versus male borrowers for much of the research that has been done to date.

One foundational study, however, by Khandker in 1998 on microfinance in Bangladesh by the Grameen Bank, BRAC, and RD-12, estimates the participation effects by gender on certain variables including labor supply, schooling, household expenditure, and assets. By creating separate estimation models for program participation and program effects based on borrower gender, Khandker attempts to separately measure the effects on different households. In this study, they consider four types of programs which were randomly selected and included: 15 with no access to credit, 40 which offered credit to both male and female heads of households, 22 programs for female borrowers only, and 10 programs for only male borrowers. Overall, the findings support the predicted notion that program credit has larger effects on the lives of poor households when women are the primary program participants (Pitt and Khandker, 1998).

Specifically, the results show that the demand for credit is significantly different for men and women and that having a male head of household decreases the expected credit received by an eligible woman by 47% and increases the expected credit of an

eligible male by 33%. This reflects microfinance institutions propensity to lend more to women who are in charge in their households than males who have control. The effects that Khandker finds are also consistent with these higher expectations of female borrowers. In terms of household expenditure per capita, the impact of female credit is found to be positive and significant while similar levels of credit taken by male borrowers have no significant effects. Additionally, an extra one “taka” of credit given to women is associated with a 0.18 “taka” increase in household expenditure and an increase of only 0.11 “taka” if the same additional amount of credit is given to a male borrower. Similarly, effects on children’s education are seen to be higher when women are the primary borrowers than compared to their male counterparts (Pitt and Khandker, 1998).

These effects show positive and interesting results when the gender of individual borrowers is compared and opens the possibility for further analysis on this subject. While many other studies consider the impacts of microfinance on the wellbeing and socioeconomic status of women, few others specifically separate these effects by the gender of program participants. While we know that in practice the majority of microfinance loans are given to female borrowers, we can speculate that these findings may be similar in other regions and other studies which are conducted in similar ways, but we cannot say with certainty that these findings are universal and therefore they should be verified with further exploration.

Analysis Section II: What is being studied?

The second level of analysis in comparing academic impact assessments of microfinance programs is the question of “what is being studied?” This constitutes an exploration of the impacts that are expected and the variables that are used to measure those impacts. Furthermore it is important to look at how each of these variables is measured by different academics. By closely analyzing the effects that researchers attempt to explain and their way of measuring those effects, we can compare conflicting results more adequately. The ultimate goal of assessing the variables used in impact assessment studies is to identify which measures are most accurate and to establish a common set of variables in order to make better comparisons across the field.

The theory behind micro lending predicts that by giving loans to poor borrowers, they will directly increase their income, not only through an initial addition of the loan amount, but by allowing individuals the startup necessary to begin a business and ultimately increase their profits and income in the long run. This direct increase in income however is also predicted to have secondary affects on other measures of the living standard such as increases in employment, accumulation of wealth and assets, empowerment of women, and health and education of their children. The combination of all of these factors in theory creates spillover effects so that benefits are felt not only by the direct borrowers, but also by non-borrowers who live in the community. Ultimately, this is predicted to affect the level of poverty in a community; therefore, the main goal of impact assessments is to study the effects of microfinance on the alleviation of poverty.

Many different researchers have analyzed each of these variables in a variety of different ways. This section will focus on the variables and data used to measure the main impacts on select variables including: income and consumption, business success and employment, health and education, and the alleviation of poverty.

I. Income/Household Consumption:

Income, or how much money one makes in a given period of time, is one of the most basic measures of economic wellbeing. In economics, income is defined as “the sum of all the wages, salaries, profits, interest payments, rents, and other forms of earnings received in a given period of time.” Generally this variable is easy to measure in developed countries; however, it is much more difficult in developing areas where few accurate records are kept, especially by those who live in poverty. Often times in these regions poor families work a number of small jobs in order to earn money. This can make the measurement of income and changes in that income difficult to assess.

Therefore, some researchers have chosen to measure household consumption as a proxy variable to estimate the effects on income. This assumes that income and household consumption are positively correlated and any increase in household consumption or spending can be interpreted as an increase in income or available money for a household.

For studies in which income is directly measured, researchers have found positive and significant associations between the amount of the given loan or the availability of credit and the level of income as self-reported by the borrowers. In Hossain’s early work, participants were asked their perception of how their income had been affected and 91%

believed the bank had a positive contribution to their standard of living, while only 1.9% reported a deterioration of their economic condition, and 5.7% reported no noticeable improvement. In addition, estimates of income were made on the basis of detailed information on the gross value of output and the costs of different production and service activities which the participants were involved in. From this data, Hossain estimated a total income effect which showed that average household income for bank members was 43% higher than that for the target group in control villages, and 28% higher than that of target-group non-participants in project villages (Hossain, 1988).

Similarly, research by Nader on the wellbeing of women in Cairo showed a positive association between microcredit and income levels. These increases make women feel economically independent and therefore also increases their self-esteem and confidence as well (Nader, 2007). The same positive and significant effect of the amount of microcredit loans on the income of loan recipients is also supported by the research of Somjita Mitra in the study of “Macro Impact of Microcredit.”

Research by Copestake in a 2001 case study of Zambia found a positive link between program participation and household income growth; however, this study concludes that this link is associated with the receipt of a second loan. From their analysis, the correlation coefficient of the amount of the first loan has an insignificant effect on the level of income, generally explained by the number of households who fail to repay their first loan and do not succeed in the program. Based on self-reported perceptions of income and well-being, 52% of borrowers reported they felt “better off” compared to 57% of the comparison group who had just entered the program, and 38% of

borrowers indicated they felt “worse off” compared to 21% of the comparison group (Copestake, Bhalotra, and Johnson, 2001).

Studies which use household expenditure as a proxy variable for measuring income define the variable in a variety of ways. In order to make reliable comparisons across studies, we must note the time period in which expenditure is measured: weekly, monthly, or annually. Additionally, some studies analyze per capita expenditure based on the number of adults in the household while others measure total expenditure over a given period of time. In Pitt and Khandker’s foundational study of 1998, by running a regression of the natural logarithm of total weekly expenditure per capita as a function of the estimated demand for credit, their results show that for women, adding an additional one “taka” of credit to a loan amount adds 0.18 “taka” to the total annual household expenditure. This indicated a positive and significant relationship between borrowing and expenditure, which is also seen in loans taken by male borrowers however the effect is diminished and only yields an increase of 0.11 “taka” (Pitt and Khandker, 1998). Later studies published by Khandker in 2001 and 2005 support the conclusion of the positive and significant impact of microfinance on per capita expenditure. His 2005 study of panel data in Bangladesh concluded that a 10% increase in the current stock of female borrowing increases total household per capita yearly expenditure by 0.09%. In addition this study looks at the effects on food and nonfood expenditure finding similar positive effects for each (Khandker, 2005).

Other studies have measured varied impacts of consumption based on the types of goods consumed: food versus nonfood, essential versus nonessential goods, and more

specific classifications as well. A study of consumption differences between borrowers and non-borrowers in Bangladesh by Syma Rahman looked at correlations between consumption on food versus nonfood items and specific types of food based on program participation. This data concludes that borrowers spend a higher percentage of their consumption on non-food items when compared to non-borrowers; however, non-borrowers showed higher consumption on non-essential items such as cigarettes and betel leaves. In addition, the study analyses the consumption differences on types of food products and finds that non-borrowers spend a higher percentage of their consumption on basic food items such as cereals, pulses, and vegetables, while borrowers spend a greater portion on protein items including meat, fish, milk, and eggs (Rahman, 2010). A study by Banerjee concluded no significant difference in total household expenditure per capita between treatment and comparison households; however, found that households in treatment areas spend significantly more capita per month on durables than comparison households. Specifically they spend more than twice as much on durables used in household business. Similarly, this data shows that spending on temptation goods is reduced in treatment areas (Banerjee et al, 2009).

However, the analysis of flagship programs in Bangladesh by Jonathan Morduch in 1998, produced results that questioned the predicted assumptions. Rather than an increase in household expenditure and consumption which is assumed to indicate an increase in income, Morduch found that on average, eligible groups consume 31-52% less than non-eligible groups in similar villages. From this, Morduch finds no statistically significant impact of microfinance on the level of consumption of eligible

households. Instead, this analysis looks at the variance of the consumption variable and finds that while program households have lower overall levels of consumption, they also have lower variability of consumption throughout the year. This indicates that program households do significantly better than control households at leveling their spending throughout the year as a result of income smoothing from program participation.

Through these two measures used by researchers we can draw certain conclusions about the effects that microfinance has on the available income of borrowers. Although neither variable can provide complete accuracy since they are mostly self-reported perceptions by borrowers, generally the research shows a positive relationship between borrowing and income. Less widely agreed upon however is the extent of this effect or the type of positive income. We see certain conclusions which find differences not only in the amount of money or income that is spent or available, but also on the types of goods that are bought and the time span over which they are bought. Ultimately the bulk of the research indicates that microfinance is not harming borrowers in terms of income, however it is not completely certain of the ways that it is improving their income.

II. Employment/Labor Supply:

The original premise of micro lending as established by Mohammed Yunus and the Grameen Bank was to provide credit to women and individuals to allow them the opportunity to establish self-enterprises in order to pull themselves out of poverty. The theory was based on the observed skills of impoverished women who often made a living doing a variety of small jobs in order to gain marginal income. Yunus' idea proposed a

method of helping these women with the capital necessary to legitimize and expand their businesses. Thus one of the primary goals of all microfinance organizations is not merely providing loans, but also helping their borrowers establish business and a means of employment. Some programs accomplish this by creating employment opportunities for their borrowers and almost all provide educational resources and courses to further develop business skill sets to encourage entrepreneurship.

This goal and effect of microfinance is measured by levels of employment or the labor supply in a given program area. In general, this is measured by the number of days worked by borrowers or households in a given period of time, generally a week or a month, and by the number of hours that they worked each of those days. This data is often self-reported by individuals and captures both the hours of self-employment as well as any hours of employment generated by the microfinance organization as well.

In the earliest study by Hossain, microfinance banks were found to generate new employment for nearly 20% of its members and increased days of employment for many of the underemployed members as well. Quantitatively, according to self-reported data, the Grameen bank loans were found to generate additional employment of 12 days per month and found that the number of employed workers was higher for participant households than it was for target-group nonparticipants in both project and control villages. Additionally, Hossain considered the type of employment that was generated and the occupation of participating bank members. He found that new employment generated by the bank was generally in the area of livestock farming, but for those

members who were initially employed, there was a shift in occupation away from agricultural wage labor to self-employed petty trade (Hossain, 1988).

Similarly, Jonathan Morduch's study of programs in Bangladesh measured the labor supply of both men and women as the hours worked in the past month and found positive and significant correlations with program participation. On the whole, he found that men and women work more in program villages relative to the controls. While this may be affected by both the self-selection and program placement biases, he concluded that the labor supply for women was significantly increased by the availability of credit after considering the difference-in-difference analysis method (Morduch, 1998).

However, the study by Pitt and Khandker of microfinance programs in the same region produced slightly different results. Their analysis measured the hours worked in the week prior to the survey and found significant and positive effects on labor supply for those participants in the Grameen Bank, but only marginally significant differences for BRAC and RD-12 borrowers. Since this conclusion was inconsistent with the expected effects based on the increases in income and household consumption, Pitt and Khandker conclude that women benefit by increasing the productivity of their market time rather than increasing the supply of that time (Pitt and Khandker, 1998).

Additionally, a recent study by Banerjee considers the same effects of microfinance by measuring the creation of new businesses and business profits rather than the hours of employment or supply of labor. New businesses are measured as those which are operated at the household level following the receipt of a microfinance loan and business profits are measured by those owning existing businesses through their

levels of revenue, inputs, and the number of workers employed by the business. This analysis finds that households in treatment areas are 1.7% more likely to report opening a new business in the past year, which has led to 32% more new businesses in treatment areas than in comparison regions. In addition, those who previously owned businesses in treatment regions reported higher monthly business profits than those in comparison areas. Therefore, programs not only have positive impacts on the development of new businesses but in the furthering of existing businesses as well (Banerjee et al, 2009).

III. Children's Education/Schooling:

In addition to directly impacting levels of income and consumption, employment, and businesses, microfinance loans are predicted to have secondary effects as a result of these increases in money and well-being. The first of these secondary effects is the level of children's education and schooling enrollment of children in participating households. In theory, the level of child education is predicted to increase as a result of program participation and increased income. This is based on the idea that as families have more income, they are able to afford the costs of their children attending school; both the direct costs associated with schooling such as buying uniforms and supplies, as well as the opportunity costs of forgone income by children attending school rather than working. The counterargument however, which has been supported by some studies, suggests that by providing loans to families and encouraging self-employment, children are increasingly relied on to help run the family business or to tend to the household chores usually done by the female head of household now preoccupied with business.

The levels of these effects are generally measured by a variable which accounts for school enrollment for children ages 5-17 and estimates the likelihood that a child attends school regularly. This variable is measured separately for boys and girls to account for gender differences in education as well, considering that in most regions that are studied girls are in general less likely to attend school than boys. Pitt and Khandker found positive results supporting the hypothesis that increasing credit participation increases school enrollment status of children. Their analysis shows that a 1% increase in the credit provided to women by the Grameen Bank increases the probability of school enrollment of girls by 1.86%, and that of boys by 2.4%. The difference between these effects for girls and boys can be accounted for by the substitution effect of girls labor versus boys labor. When women are the primary recipients of loans, their work in the household is generally better replaced by the work of girls than by boys therefore boys are less likely to be needed at home and are more likely to attend school instead (Pitt and Khandker, 1998). Similarly, research by Nader in Cairo shows a positive association between school enrollment and microcredit suggesting that investing in the current generation has greater implications for the next generation as well and that women are very focused on the education for their children (Nader, 2007).

Research by Gautam Hazarika and Sudipta Sarangi on the relationship between access to microcredit and child work in Malawi expands on this idea of the substitution of labor between heads of households and children. By defining child work either as household domestic work which includes fetching firewood or drinking water and other domestic housework, they measured whether the child undertook the activity, but not the

number of hours that was spent working. Through their analysis they found that children's propensity to work increases with increased household access to microcredit, but in contrast to what is expected, this increase in household work does not significantly reduce their school attendance (Hazarika and Sarangi, 2005).

However, not all of the research finds such positive results. A randomized evaluation by Banerjee finds through comparative statics that households in treatment areas do not spend more money on education and are no more likely to have children attend school, suggesting that access to microcredit changes very little about the way that households function (Banerjee et al, 2009). Additionally, the analysis by Morduch suggests that while on the surface, effects seem to be positive as 55% of daughters and 62% of sons of borrowers are enrolled in schools compared to 41% and 34% respectively for non borrowers, after a difference-in-difference comparison, analysis shows that children in these program areas are actually worse off than their counterparts in control villages (Morduch, 1998).

Ultimately from these studies we see no real consensus on the secondary effects that microfinance loans have on the school enrollment and education of children. These effects are obviously less directly impacted and are subject to a variety of other factors as well, such as family situations and priorities; therefore, it is harder to objectively measure or predict their impacts for other borrowers in similar situations.

IV. Health:

Another predicted secondary effect of increases in microcredit and income is improvements in the health status both of primary loan borrowers and of their children. With increased resources and finances, it is predicted that families will have more opportunities to seek medical attention and ideally to reduce the risk of disease. However, what has been found by the research today does not generally support this hypothesis. In general, health is measured as a self-reported variable on the perception of health on a scale, or by the amount of money spent on health, and sometimes by the number of visits children have to a doctor. The analysis by Nader finds no significant impact on the level of women's health as measured on a self-perceived scale, which leads to the conclusion that women under-value their own level of wellbeing and are more likely to spend money on their family than on taking care of themselves (Nader, 2007). This conclusion is confirmed by the research of Banerjee which finds no significant differences in health spending and reported illness between treatment and control groups (Banerjee et al, 2009).

V. Women's Empowerment:

By providing loans to women borrowers, microfinance attempts to affect levels of women's empowerment by allowing them to take a more active role in the leadership of their household. This variable is hard to define and harder to measure, but it is one of the most general and basic goals of most microfinance organizations. Theoretically, women's empowerment is affected and enhanced by the improvement of each of the

other variables that we have looked at, most notably through increases in income raised by women. This results in increased expenditure and gives them more control over decisions on how money should be spent in their household. Attempts to systematically measure this idea of women's empowerment have been based on reported perception of harmony in the family or levels of women's decision making; however, neither of these variables have provided conclusive results. While Nader's study found a positive but non-significant association between the level of perceived harmony in the family and level of microcredit, results cannot be considered conclusive based on the limited data that could be collected (Nader, 2007). Additionally, the study by Banerjee measured the level of women's decision making within the household and found no significant differences between treatment and control samples (Banerjee et al, 2009).

VI. Alleviation of Poverty:

The ultimate and most general goal of microfinance is aimed at the alleviation of poverty; therefore, variables which measure the impacts on the level of poverty are arguably the most important in any impact assessment study. This variable is impacted by all the other variables measured and accounts for many of the spillover effects to non-borrowers, which are not explicitly identified, as well as the direct effects on borrowing households themselves. In general, the level of poverty is measured by a "head count ratio" which identifies the proportion of households who fall below the poverty line, defined for different regions based on the amount required to maintain a minimum standard of living.

According to research by Hossain, the proportion of households living in poverty is 84% within the target-group non-participants living in project villages and 80% for the target group in control villages, but is only 61% for Grameen Bank members. Similarly, bank members in extreme poverty are only 48% compared to the percentage of control group households living in extreme poverty which is 75%. Additionally, these results are expanded to the village level where the proportion of moderately poor in project villages is 62% while the same statistic is close to 76% in control villages (Hossain, 1988).

These conclusions are supported by a similar report by Rafiq, Chowdhury, and Cheshier which compared the objective poverty status of households between program and comparison households. Their conclusions found that the poverty status of comparison households is 22% higher than that of program households. By analyzing these effects over time, they find that the average probability of being below the poverty line for non-participating households is 0.7681, while the same probability for households with membership duration of more than seven years is 0.2785. Ultimately, they find that the poverty status of households decreases with the increase of membership duration, but at a declining rate (Rafiq, Chowdhur, and Cheshier, 2009).

Finally, a panel data analysis by Khandker which surveyed the population first in 1991 and later in 1998, showed similar reductions in the poverty status of households. In the time between the two surveys, moderate poverty in the sample villages declined by 17% and extreme poverty in the same villages was reduced by 13%. Khandker reported poverty reduction for participating households of up to 1.6% annually for reductions of moderate poverty and 2.2% annually for reduction of extreme poverty. These findings

show that microfinance accounts for 40% of the overall reductions in moderate poverty in rural Bangladesh during this time period (Khandker, 2005).

While some of the research may disagree on the measurement of different variables, and find different results for different regions, ultimately the consensus on the effects of microfinance on the alleviation of poverty is promising. Although programs and loans may not be directly or indirectly affecting each of the predicted variables that the founders hoped, they appear to ultimately be positively influencing the end-goal of reducing both moderate and extreme poverty in these regions.

Analysis Section III: How is the analysis done?

The third level of analysis which is important to consider when evaluating impact assessments is the question of “how is the analysis done?” This section will analyze the various methods of analysis that are widely used to interpret data and their limitations. Impact assessments come in a variety of forms and often have a variety of objectives, accordingly there are a variety of methods available to researchers to conduct their analysis. Generally, the choice of method depends on the goals or objectives of the study, the resources and data available, and the level of complexity which is desired.

David Hulme, in his paper, *Impact Assessment Methodologies for Microfinance: Theory, Experience and Better Practice*, identifies three conceptual frameworks for analysis: the scientific method, the humanities tradition, and participatory learning and action (PLA). The humanities tradition aims to interpret the process of intervention and identify highly plausible impacts without doing statistical evaluations to prove quantitative results. This qualitative approach recognizes the differences in accounts of impact on different groups of people and attempts to explain the theory behind these differing impact perceptions. Similarly, the participatory learning and action approach identifies the complexities in the impacts of microfinance and attempts to measure more broadly the factors which influence being successful. Rather than focusing on variables and levels of success identified by researchers, PLA studies believe that the poor should identify their own indicators of progress (Hulme, 2000).

While each of these approaches provides interesting considerations, the framework under which most impact assessments are conducted, and the focus of this

section, is the scientific method. Studies done using the scientific method use quantitative data and seek to identify casual relationships through experimentation. However, identifying accurate sample groups and accounting for selection biases, makes this process significantly more difficult. Ultimately the goal of measuring the impact of microfinance on a group of borrowers is to answer the question, “how would these individuals have done without participation in the program?” In order to establish the causal role of microfinance, researchers must separate out the influence of any other determining factors which can include age, education, experience, and environmental influences. Without accounting for these underlying differences and the selection biases that were discussed earlier, scientific method analysis can lead to inflated impacts which predict microfinance accounts for greater differences than it really does. In order to account for these difficulties, researchers have identified two main methods of analysis under the scientific method. These approaches include the difference-in-difference analysis and the regression analysis.

I. Difference-in-Difference Approach:

One method that is used to account for the self-selection and program placement biases is the difference-in-difference method. This method requires the identification of a treatment group and a control group and measures the income of these two groups at two different times. An understanding of this method of analysis is best described by Figure 1 from *The Economics of Microfinance* by Armendariz and Morduch which identifies the effects on income of various sources.

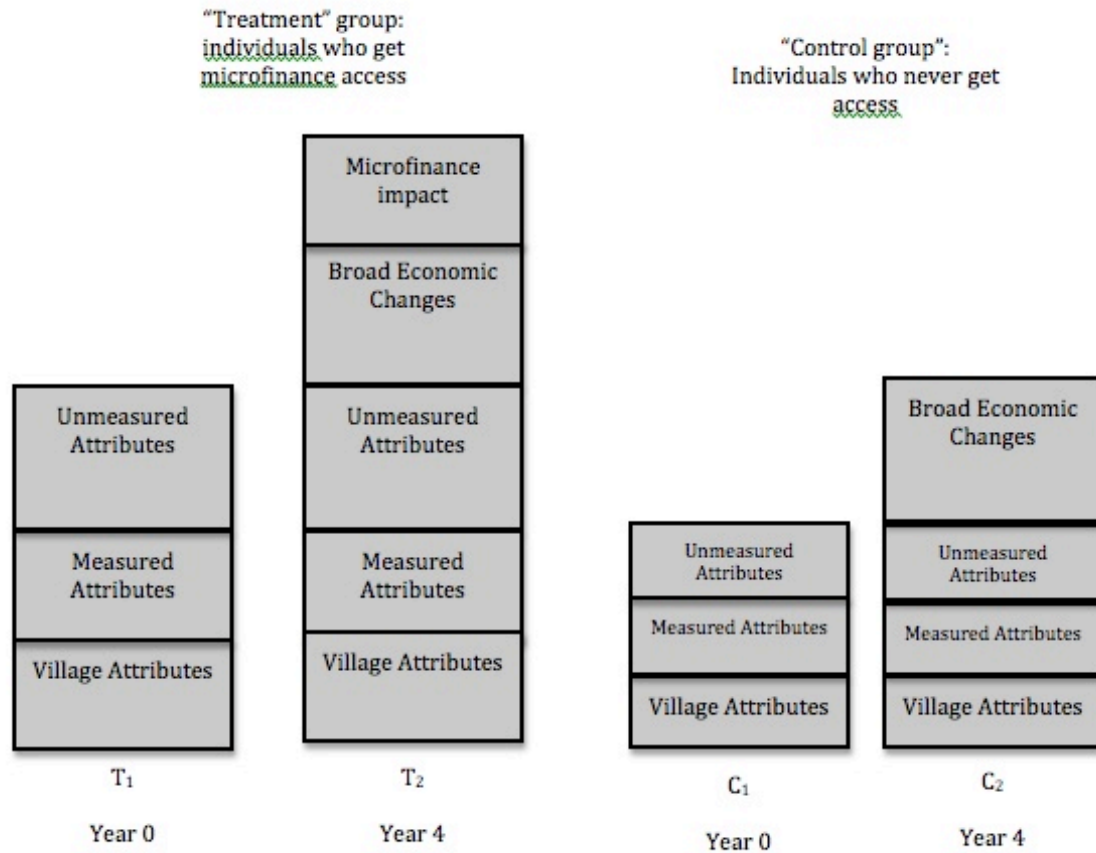


Figure 1. Sources of income for treatment and control groups. (Armendariz and Morduch, 2005)

In order to isolate the “microfinance impact” which is assumed to have impacted the treatment group at the second time of data collection, T_2 , we must first identify the factors which are impacting the initial level at the time of the first survey, in T_1 . These factors include village attributes, measured attributes such as age and education, and unmeasured attributes such as entrepreneurial ability. A basic assumption of the difference-in-difference technique is that these baseline characteristics are constant over time. Therefore, we assume that at the time of the second survey, the difference in income levels can be entirely accounted for by the effects of broad economic changes and

the microfinance impact. In order to identify the level of economic change, we must compare the changes in the treatment group to the changes in a separate control group, who do not have access to microfinance programs.

Comparing the data from T_2 for both the control and treatment groups accounts for the impact of broad economic changes which apply equally to each sample group; however this does not account for the underlying differences between samples. Since it is impossible to sample identical treatment and control groups, we can account for these underlying differences by comparing the change between Year 0 and Year 4 for each sample group. By comparing the differences, $T_2 - T_1$ and $C_2 - C_1$, the difference-in-difference method mitigates the self-selection bias by controlling for baseline characteristics of each sample group.

The major limitations of this approach however rest on the assumption that the impacts of personal and village attributes remain constant over time. This is contrary to what we would generally expect, that as people get older and in theory gain more education and experience, these factors will likely have a greater positive impact on variables such as income. Therefore it is important to attempt to identify control groups as similar to the treatment groups as possible to account for the immeasurable effects of each. In addition, researchers have established two solutions to overcome this issue. The first is to modify the analysis question that is being asked from “the effects of microfinance participation” to “the effects of microfinance access.” From this change, outcomes are measured by the entire population of program villages and compared to the village outcomes of control villages which do not have access to programs. Rather than

following specific households and their decision to participate, this form of analysis is based on the total changes to the community and relies on calculations of household averages. The second solution is to identify future borrowers as the control group to compare to actual participants. Generally this involves comparing older borrowers to those who are just entering the program; however, this comparison is subject to biasing effects of nonrandom attrition. Nonrandom attrition is the idea that the pool of borrowers who continue with the program changes overtime as a result of unsuccessful participants who are forced to drop out, and successful participants who no longer need access to microfinance loans (Armendariz and Morduch, 2005).

Morduch employed this method of measuring the effect of microfinance access through a difference-in-difference analysis in his 1998 study, “Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh.” In this study, Morduch identifies five different types of households based on eligibility status and whether they are located in a program or control village. In each of the three programs studied, eligibility depends on landowning status – only households who own less than one half an acre of land are eligible to receive loans. Morduch’s analysis compares households in the program village who are eligible to participate, both those who choose to participate and those who do not, with households in control villages who would be eligible to participate had there been a program in their area. By comparing all households that are eligible to participate, this eliminates the problem of self-selection bias of those that choose to participate. Instead, this analysis captures the village level effects of program presence in the treatment village. A straight comparison of these

village effects, however, does not account for the baseline differences in village attributes between the two. In order to account for these fundamental differences, the difference-in-difference approach is applied (Morduch, 1998).

This analysis assumes that there are no spillover effects in treatment villages to non-borrowers and calculates the average impact on households by dividing the impact per eligible household by the proportion of eligible households that participate. Additionally, this method only measures program participation as a dummy variable; therefore, the effects are based on whether or not a household receives a microfinance loan, regardless of the amount of that loan. After accounting for each of these biases, Morduch's analysis concludes that there are no strong impacts on increased household consumption as a result of microfinance, but rather the evidence suggests a decrease in consumption variability annually as a result of diversified income streams. The major criticism of Morduch's method is the limitations which arise based on the enforceability of eligibility criteria for program participation. In practice, many households who receive loans and are measured in Morduch's treatment sample actually own more than one half acre of land – evidence suggests there is limited enforcement of the “functionally landless” rule in actuality. However, in the control group, this rule is strictly enforced. This can lead to biases which may over-estimate the impact of microfinance by comparing borrowers who begin better off to comparison groups who are not functionally equal.

II. Regression Approach:

Another method of analysis that is often used in impact assessment is the regression approach. A more sophisticated method than the difference-in-difference analysis; the regression approach estimates an equation of variables to determine the causal treatment effects. Using regression analysis researchers are able to identify a selected outcome to measure and determine the causal relationships between microfinance and that outcome. In order to isolate and measure the effect of microfinance through this analysis, the effects of all other causal variables must first be identified and accounted for in the equation as well. This often creates difficulties with the amount of data that is required, and the possibility for covariance or omitted variable biases.

Regression analysis expands on the theories used by difference-in-difference techniques and allows researchers to establish a causal relationship between variables. One major study which used this methods was the research done by Pitt and Khandker in 1998. In order to measure the impact of credit on households by gender, Pitt and Khandker developed an equation to estimate the demand for credit conditional on certain household and village characteristics. This equation was run separately for male and female borrowers and includes independent variables which account for household characteristics such as age and education of the head of household, as well as village characteristics which also determine household demand. From these estimates of program participation and household demand of credit, Pitt and Khandker developed a second regression to measure dependent variables such as income, schooling, or labor

supply, conditional on the level of program participation estimated previously. This equation accounted for additional village-level fixed effects on each of the dependent variables in order to estimate the regression coefficient for the program participation variable calculated by the first equation. This parameter measures the effects of participation in a credit program on the outcome and ultimately represents the treatment effect of the program.

In the initial phase, this research conducted estimates based on cross-sectional data taken during one time period. From these estimates, comparison analysis is done between households with and without program access to estimate the effect of the program on that outcome. This process of analysis requires the use of sophisticated statistical methods and assumes spillover effects are non-existent and does not account for program placement bias. As a result, these analyses tend to lead to an exaggeration of impacts. The initial research by Pitt and Khandker published in 1998, concluded that for every one hundred “taka” lent to women, annual household consumption increases by 18 “taka,” and the same measure for men only increases annual consumption by 11 “taka” (Pitt and Khandker, 1998).

Following the second round of follow-up data, Pitt and Khandker conducted a second analysis based on the full panel data of programs in Bangladesh. Using data from two time periods allows the researchers to conduct regression analysis which implements differencing techniques in order to compare and account for changes over time. From this comparison, Khandker analyzes the causes of poverty rate reduction in both control and treatment villages over the given time period and finds that microfinance can be

attributed for up to one-third or one-half of the declines that were experienced.

Additionally this analysis finds that lending one hundred “taka” to female borrowers increases annual household consumption by only as much as eight “taka” annually. This estimate is much lower than the initial conclusion found in Khandker’s earlier work and shows the likelihood of differing conclusions based on different sets of data and methods of analysis (Khandker, 2005).

Problems with regression analysis estimation techniques arise from the endogeneity of participation in credit programs resulting from nonrandom program placement and unmeasured household and village attributes which affect both the demand for credit and specific household outcomes which are measured. One solution to overcoming the problem of endogeneity is through the use of instrumental variables. The instrumental variables approach addresses issues caused by measurement error, reverse causality, and omitted variable biases by finding a variable that explains the level of credit received but has no impact on the outcome of interest. The difficulty with this approach is finding such a variable which meets those requirements. One example often cited is the use of interest rates which can explain the amount of credit that is demanded by households without having a direct impact on other variables of interest such as income or schooling. However, in most microfinance institutions interest rates seldom vary between borrowers. In practice, it is extremely difficult to find instrumental variables that are effective (Armendariz and Morduch, 2005).

From this overview we see that different methods and analysis techniques each offer certain advantages and when used separately can come to drastically different results based on the same data. Over time, we see researchers moving further away from a single method approach towards a more pluralist approach which combines the advantages of multiple methods. As Hulme states, studies should, “seek to combine the advantages of sample survey and statistical approaches with the advantages of humanities or participatory approaches.” Not only in terms of the technical approaches for quantitative analysis, but also in indentifying the ultimate research goal, in order to best identify the impact that microfinance is actually having it is important for researchers to take a multifaceted approach to their studies.

Conclusion

The goal of this research was to critically analyze the bulk of the academic studies which have been published to date in the field of microfinance. Since its foundation by Mohammad Yunus with the Grameen Bank in Bangladesh, microfinance has grown to be known as the most popular fix for poverty worldwide. Through the practice of lending small amounts of money to impoverished people who lack traditional collateral and are overlooked by the formal banking sector, microfinance institutions have changed many lives. These loans give borrowers, who are generally women, the necessary start up capital to ensure the success of their businesses and to establish a sustainable lifestyle above the poverty line.

Over the year, as the microfinance revolution continued to gain acclaim, the number of academic studies which measure the impacts of these programs on the lives of borrowers and the communities in which they live also increased. Each of these studies presents a unique focus on specific areas and distinct methods of conducting research and often they reach conflicting findings. As a result, it is only through looking at an overall comparison of the field of study as a whole that we can begin to reach a consensus on the actual effects of this phenomenon and to discuss the future of the field. This analysis compared studies across three main focus questions: who is being studied? What is being studied? And how is the analysis done? By breaking studies down we were able to draw important conclusions.

From the first level of analysis focused on who is being studied, the research to date shows significant limitations based on the identification of accurate control groups

and the problems of the self-selection and program placement biases. Many studies provided a variety of methods of data collection and control group identification to mitigate these biases, but they still serve as strong limitations to any conclusion. Since the goal is to isolate and identify the impact of the microfinance program on the changes in dependent variables, identifying accurate control groups is one of the most difficult aspects of doing research in this field. In addition, researchers acknowledge that acquiring reliable data through self-reported surveys and questionnaires may also be flawed, and therefore acknowledge the importance of a multifaceted approach to data collection.

The second main conclusion that we draw from this section is that results can vary, as evidenced by regional differences across the world. By comparing studies from three different continents, it becomes clear that not all Microfinance Institutions place an equal emphasis on aiding the poor. We see examples in many countries, especially in Latin America and Africa, where microfinance loans are not necessarily targeted at reaching the poorest population of those regions. Therefore, it is impossible to strictly compare the measures of success of these programs when in fact they are significantly different. Ultimately, this questions the possibility of the success of microfinance in varying regions of the world, and whether this notion which was developed and successful in Bangladesh is a transferrable method to reduce poverty in different regions.

From the analysis of the most widely measured variables by impact assessments in the second section, the conclusion is that in general results are varied. Specifically, studies found that variables attempting to measure the effect of microfinance on levels of

income, through proxy variables of consumption, estimates of business profits, or self-reported levels of income, were positively correlated with participation in microfinance programs. Additionally, variables measuring employment and labor supply found positive correlations in measuring the amount of work generated by microfinance loans, and overall measures of the levels of poverty in these regions were significantly reduced as a result of program membership as well. However, for variables aimed at measuring secondary effects such as health, schooling, and the empowerment of women, studies primarily found non-positive or inconclusive results.

Finally, in the third level of analysis of the methods used to conduct impact assessments, we see that there are strong limitations presented by each of the methods presented. From the conflicting results produced by Pitt and Khandker and Jonathan Morduch, it is clear that the methods of analysis can produce different conclusions based on the same data. Since neither the difference-in-difference nor the regression approach can entirely remove the biases created by self-selection and program placement, it is not safe to judge which one might be “better” or more accurate. What is clear, however is that researchers must be aware of these biases and the limitations they present. Research today is still faced with the same difficulties of studying a field based generally on self-reported data where records are minimally kept or accurate. As the field of research is still relatively young, the methods of accounting for these biases are still being developed and new methods may be established in the future

Ultimately, through this analysis of the leading impact assessment studies on the field of microfinance to date, it is safe to say that these programs have positive effects for

their borrowers and the general community, but they may not be as successful as they were once predicted to be. In order to fully understand what is happening and what the future will hold for these individuals whose lives are being affected today, we need more time and more impact evaluations. In developing these future studies it will be important to consider the context in which they are done, the specifics of the programs which they are focused on, and the people which they are measuring. It is clear that one issue for future programs remains the dedication to reaching the poorest borrowers and the commitment to providing a holistic approach to lending with educational resources and opportunities. Additionally, a stronger emphasis in the future should be placed on both the borrower and non-borrow impacts and identifying changes in village-wide characteristics as a result of lending to a portion of the population.

While this thesis was focused on the analysis of academic studies in the field, it is important to note the increasing number of popular news reports on the growing number of negative implications of microfinance today. The biggest grievance raised by popular media is based on the transition of microfinance from a poverty reduction tool to a means of earning business profits off the poor in developing countries by major banks. This concern manifest through the obscene interest rates charged to some impoverished borrowers by profit-focused Microfinance Institutions. In a New York Times article published on April 13, 2010 entitled, “Banks Making Profits From Tiny Loans,” the focus is on major bank programs lending to individuals in countries such as Mexico and Nigeria at interest rates of over 100% (MacFarquhar, 2010).

Rather than avoiding the loan sharks as microfinance was created to do, this new wave of microfinance institutions has merely created a new set of loan sharks. According to data in this article, the average rate of interest and fees in Mexico is around 70%, significantly higher than the global average rate of 37%. To date, the microfinance industry has raised over \$60 billion in assets, and currently over 60% of all microfinance loans are financed by banks and financial firms, with only 35% of clients being served by nongovernmental organizations (MacFarquhar, 2010). It is clear that the business world has recognized and established the potential for profit and that the field is shifting away from the goals and objectives on which Yunus founded the Grameen Bank.

Therefore, only time will tell what the future of these effects will be. Since the consensus on the effects from the studies considered in this paper were somewhat contested, it is clear that future loans with significantly higher interest rates may have even smaller benefits to borrowers. This study looked at programs focused on poverty reduction which targeted the poorest individuals, though reports today indicate that this is not where the future of microfinance is heading. In order to stay current on the overall knowledge of the field, it is important to periodically step back and look at the updated research as a whole to learn from what we know and to adapt programs accordingly.

Ultimately what this thesis shows is that the collection of what we know about microfinance is still quite limited. While there is significant research which shows the positive effects that microfinance loans can have on individuals, it is not certain whether these positive effects are felt by everyone that is. At its finest, microfinance has the potential to reduce poverty by promoting entrepreneurship in developing countries, but

studies show that it may not be the newfound panacea to poverty universally. What is also apparent is that the future of the industry is somewhat undefined. Based on increasing reports of microfinance institutions focused on generating profit rather than aiding their borrowers, it is becoming increasingly important to look into the practices and policies of lending programs before future investment.

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